Goddard Space Flight Center 2009 Sample Student Projects

Required Academic Level

Graduate/Masters

Category

Computer & Info. Sci

Subcategory

SW Systems Engineering

Project Title

Aerospace Engineering Analysis Software Developer

Project Description

This position involves validation, testing, and development of an existing aerospace engineering analysis software that is based on Java. Validation of the software involves researching appropriate aerospace references for the correctness of the algorithms and models that were coded, making appropriate modifications as needed, and creating unit tests to demonstrate its use and correctness. The position also involves generating regression test cases and the set up of the configuration management of the software elements. Further development of additional functionalities may also be required. Knowledge and experience in Java programming and software development are required. Knowledge of spacecraft orbit propagation, force models, orbit determination techniques, and numerical programming is highly desirable. Knowledge and experience in Matlab are highly desirable.

Mentor's Expectation of Student

The intern is expected to have strong interest in learning analysis techniques of orbit modeling, propagation, and estimation on which the current aerospace engineering analysis tool is based. He/she is expected to gain understanding of the current aerospace engineering analysis tool and determine methods of validation of its various functionalities. He/she is to make changes as needed and create regression test cases. He/she is expected to provide a final summary report of his/her work at the end of the internship.

Discipline of Project and/or Background Needed to successfuly complete the project

Software Engineering; Aero/Astronautics

Skills

Listening/Note Taking, Analysis, Organization, Problem Solving, Research, Teamwork, Time Management, Windows, Excel, Word, Powerpoint, Java, Computer Modeling/Simulation, Eclipse, Software Testing